Filing Date: December 30, 1999

Title: NON-LINEAR ADAPTIVE VOLTAGE POSITIONING FOR DC-DC CONVERTERS

Assignee: Intel Corporation

REMARKS

This responds to the Office Action mailed on April 21, 2005.

No claims are amended, cancelled, or added; as a result, claims 1-16 remain pending in this application.

§102 Rejection of the Claims

Claims 1-10 and 12-16 were rejected under 35 USC § 102(a) as being anticipated by Redl et al. (U.S. 6,064,187).

Redl discusses a voltage regulator using a current sensor 64, a voltage reference and voltage output error amplifier 59, and a sensing circuit 78 with comparator 76 to sustain voltage output of a voltage regulator under varying current loads.

The cited portion of Redl (col. 10, ln. 65 – col. 11, ln. 15) describes operation of the circuit under varying current conditions, and illustrates changes in output voltage with a change in current drawn in Figures 10a and 10b. As can be seen most clearly in these Figures 10a and 10b, an increase in current load results in a decrease in output current, as is the case with prior art voltage regulators and DC-DC converters.

In contrast, the pending claims recite a DC-DC converter having opposite characteristics, such that the output voltage is at a maximum level when the current drawn is at a maximum load current level and the voltage is at a minimum level when the current drawn is at a minimum but nonzero load current level.

Claims 1-5, 7-10, and 13-16 were rejected under 35 USC § 102(a) as being anticipated by Rincon-Mora et al. (U.S. 6,188,211).

Rincon-Mora senses an output voltage of a voltage regulator 10 via a voltage divider network made up of high-resistance resistors 40 and 42. It further uses a voltage feedback network to regulate the output voltage based on the sensed output voltage from the voltage divider network.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

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Rincon-Mora fails to consider monitoring output current, and does not appear capable of monitoring or using output current to adjust voltage. Rincon-Mora also realizes a decrease in output voltage when output current increases, as is shown in the cited Figures 2a and 2b.

The pending claims, in contrast, recite sensing a current drawn from a DC-DC converter, and adjusting the output voltage based on sensed current such that the output voltage is at a maximum level when the current is at a maximum level and the voltage is at a minimum cu level when the current drawn is at a minimum but nonzero level.

Because neither of the cited references use sensed load current to adjust the output voltage such that the output voltage is at a maximum level when the current is at a maximum level and the voltage is at a minimum cu level when the current drawn is at a minimum but nonzero level, the pending claims are distinct from the cited references. Reexamination and allowance of the pending claims is therefore respectfully requested.

§103 Rejection of the Claims

Claim 11 was rejected under 35 USC § 103(a) as being unpatentable over Redl (U.S. 6,064,187) in view of Covington et al. (U.S. 6,031,749).

This claim depends on a claim believed to be in condition for allowance as explained in greater detail above, and so is also allowable as dependent on an allowable base claim.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

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Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((612) 349-9581) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

ROBERT J. FITE

By his Representatives,

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Date 44 28 05

By John M. Dahl

Reg. No. 44,639

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 284 day of July, 2005.

Name

Signature